

Health Impacts of Hunger: Making the Connections Between Food Insecurity and Health

Rendezvous Room



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Kathy Chan
Director of Policy
Cook County Health & Hospitals System



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Elizabeth Patton-Whiteside, RN, BSN, MBA

Public Health Administrator

East Side Health District



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Hunger Is It a Public Health Concern?

Elizabeth Patton-Whiteside, RN, BSN, MBA
Public Health Administrator
East Side Health District









**19.9 million
Americans live in**



**The poverty
rate for children
is 19.9% (14.7
million)**

**Did she eat
today?**



A group of people, mostly older adults, are seated in rows of red theater seats. They are looking towards the camera with various expressions, some appearing surprised or concerned. The text is overlaid on the image.

**Somebody did not eat
today!**

Guess who?

**Will my
baby be
healthy?**



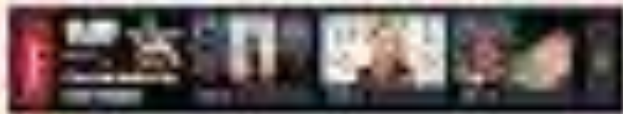
**My child ate. I
didn't!**



I ate!
Did
you?



Plus-size fashion like Paris Hilton



Plus-size fashion like Paris Hilton

Plus-size fashion like Paris Hilton



**Hunger
comes in
all shapes
and sizes**

Guess who?









Are you
hungry?



Healthy?

Hungry?

**You
Decide!**

Angela Odoms-Young, PhD

Assistant Professor

Department of Kinesiology and Nutrition

University of Illinois at Chicago



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Food Security and Health: What is the relationship?

ANGELA ODOMS-YOUNG, PHD

ASSISTANT PROFESSOR

DEPARTMENT OF KINESIOLOGY AND NUTRITION

UNIVERSITY OF ILLINOIS AT CHICAGO

ASSOCIATE DIRECTOR FOR NUTRITION

OFFICE OF COMMUNITY ENGAGEMENT AND NEIGHBORHOOD HEALTH
PARTNERSHIPS

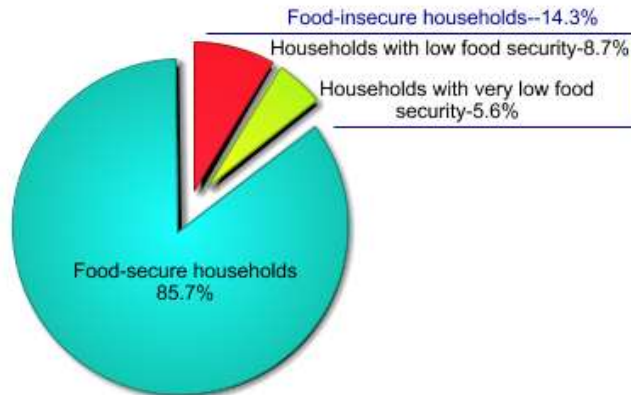
UNIVERSITY OF ILLINOIS HEALTH AND HOSPITAL SYSTEMS

Food Insecurity

- ▶ “Food insecurity is limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.”

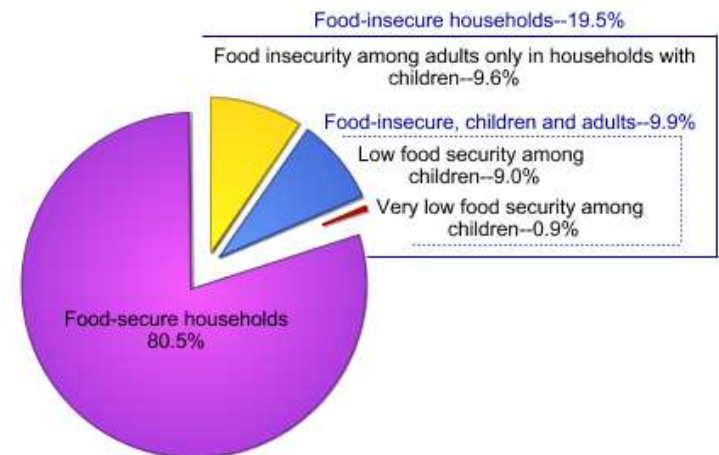
Prevalence of Food Insecurity

U.S. households by food security status, 2013



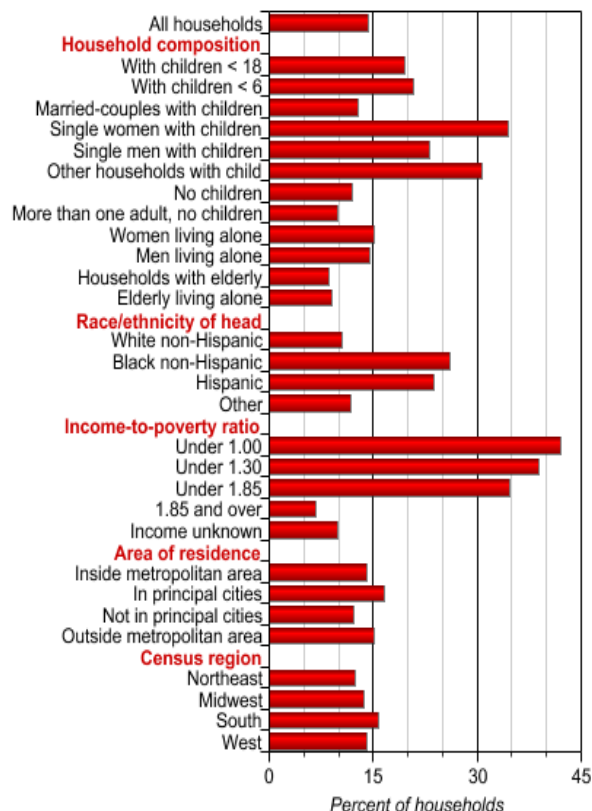
Source: Calculated by ERS using data from the December 2013 Current Population Survey Food Security Supplement.

U.S. households with children by food security status of adults and children, 2013

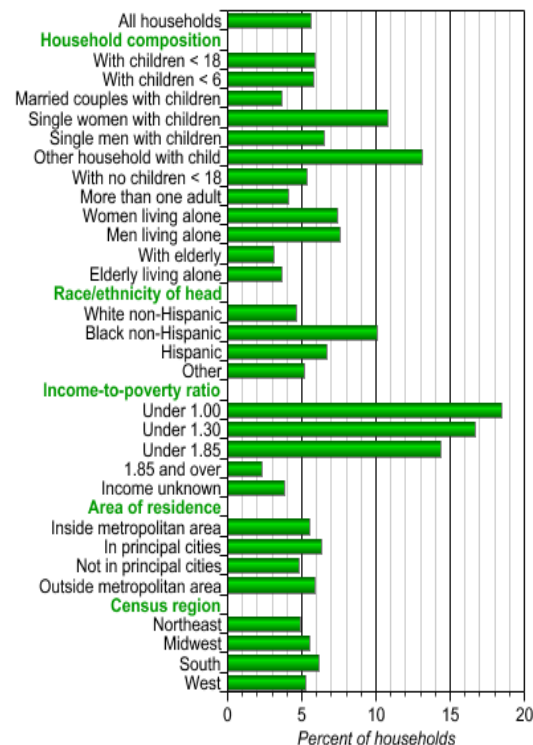


Source: Calculated by ERS using data from the December 2013 Current Population Survey Food Security Supplement.

Disparities in Food Insecurity



Source: Calculated by ERS using data from the December 2013 Current Population Survey Food Security Supplement.



Source: Calculated by ERS using data from the December 2013 Current Population Survey Food Security Supplement.

Food Insecurity: Multi-Dimensional Concept

▶ **Psychological**

- ▶ Food Anxiety
- ▶ Feelings of deprivation or lack of choice
- ▶ Perceptions that food is inadequate in quality or quantity
- ▶ Experience of running out of food without money to buy more

▶ **Social**

- ▶ Deviation from social norms
- ▶ Social exclusion
- ▶ Powerlessness, guilt, and shame

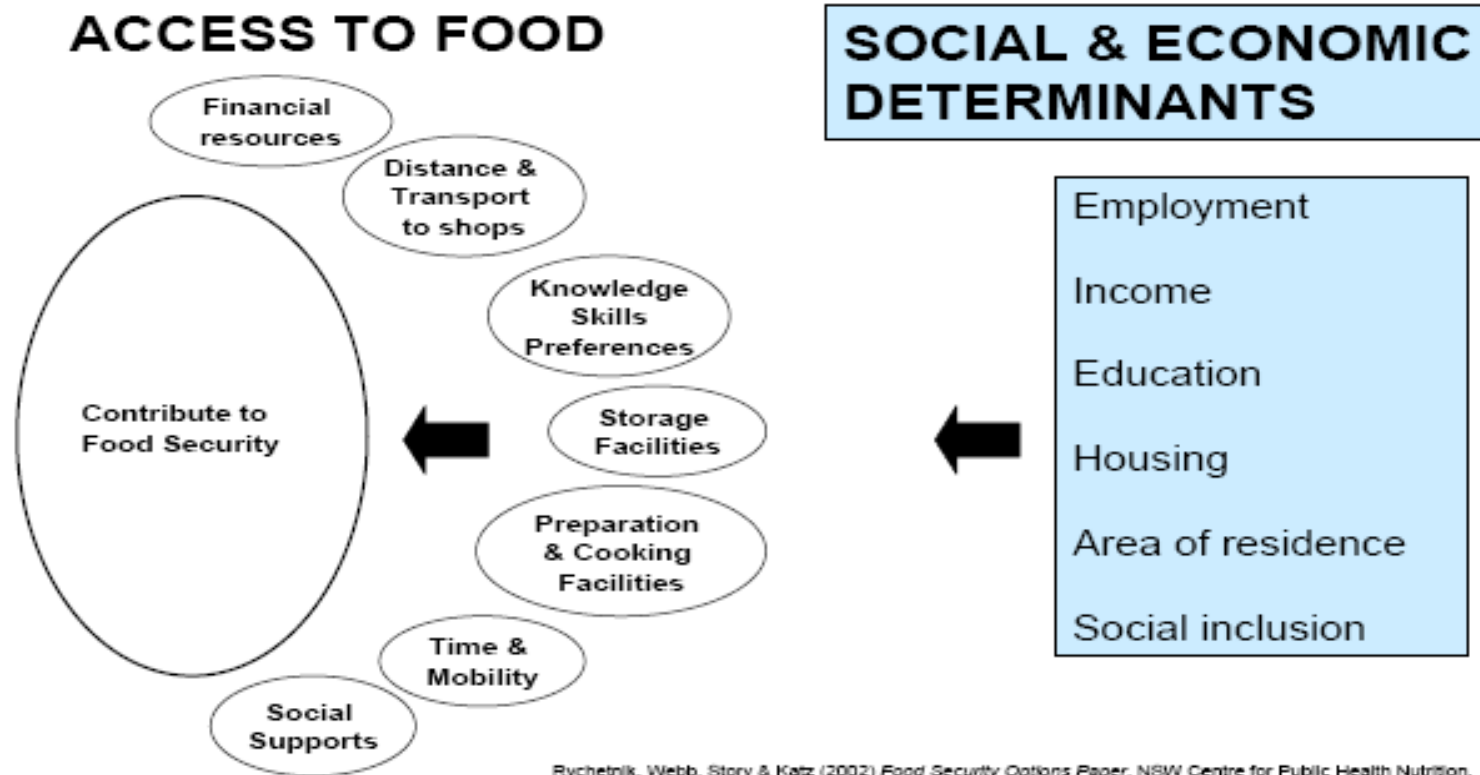
▶ **Managed Process**

- ▶ Engaging in strategies to obtain food or money for food in the context of severe resource constraints
 - ▶ the use of food assistance programs,
 - ▶ delayed bill payments
 - ▶ sending children to a friend's or relative's home for meals
 - ▶ selling or pawning possessions

▶ **Physiological**

- ▶ Adjustments to normal food use
- ▶ Reduced food intake
- ▶ Physical sensation of hunger
- ▶ Weight loss/Weight gain
- ▶ Nutritionally inadequate

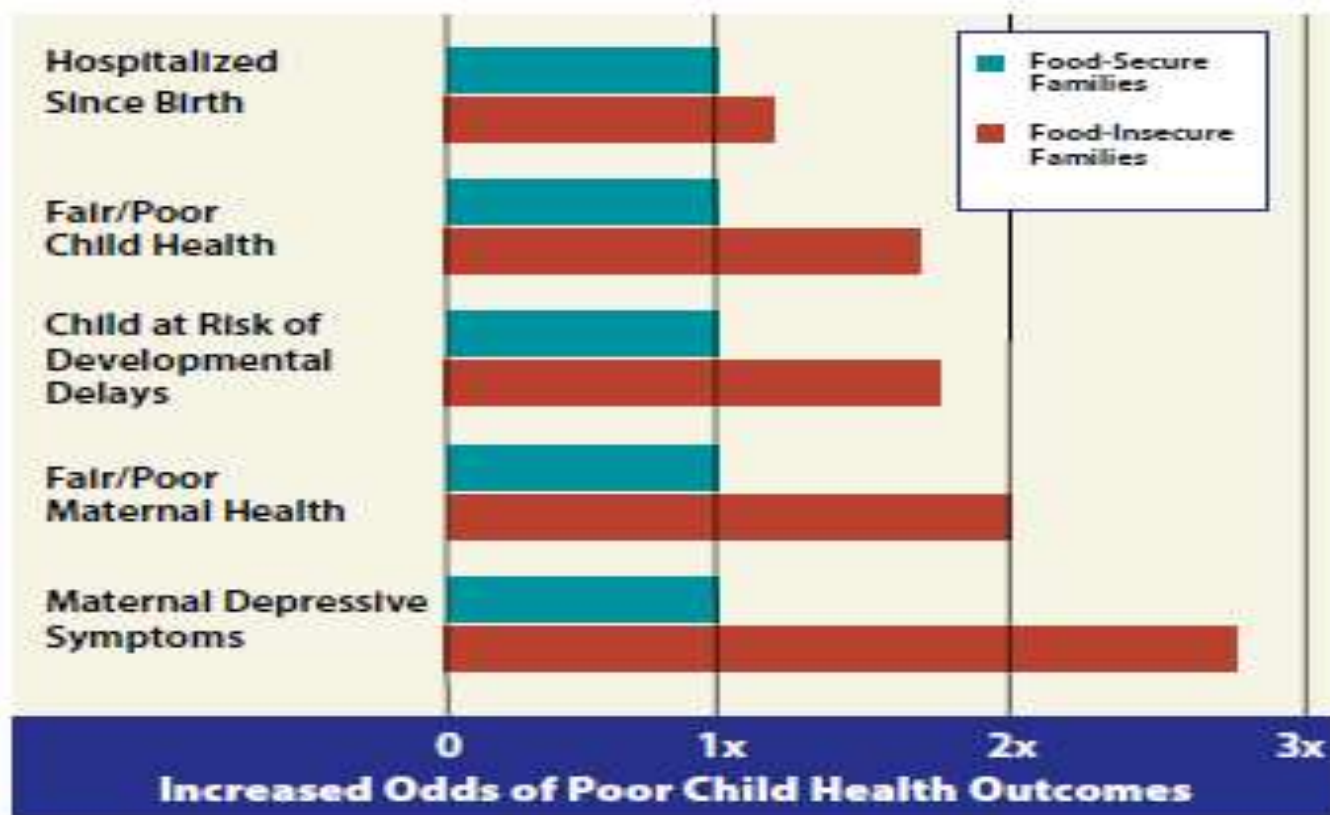
Factors that Influence Food Insecurity





What is the Relationship of Food Insecurity and Health?

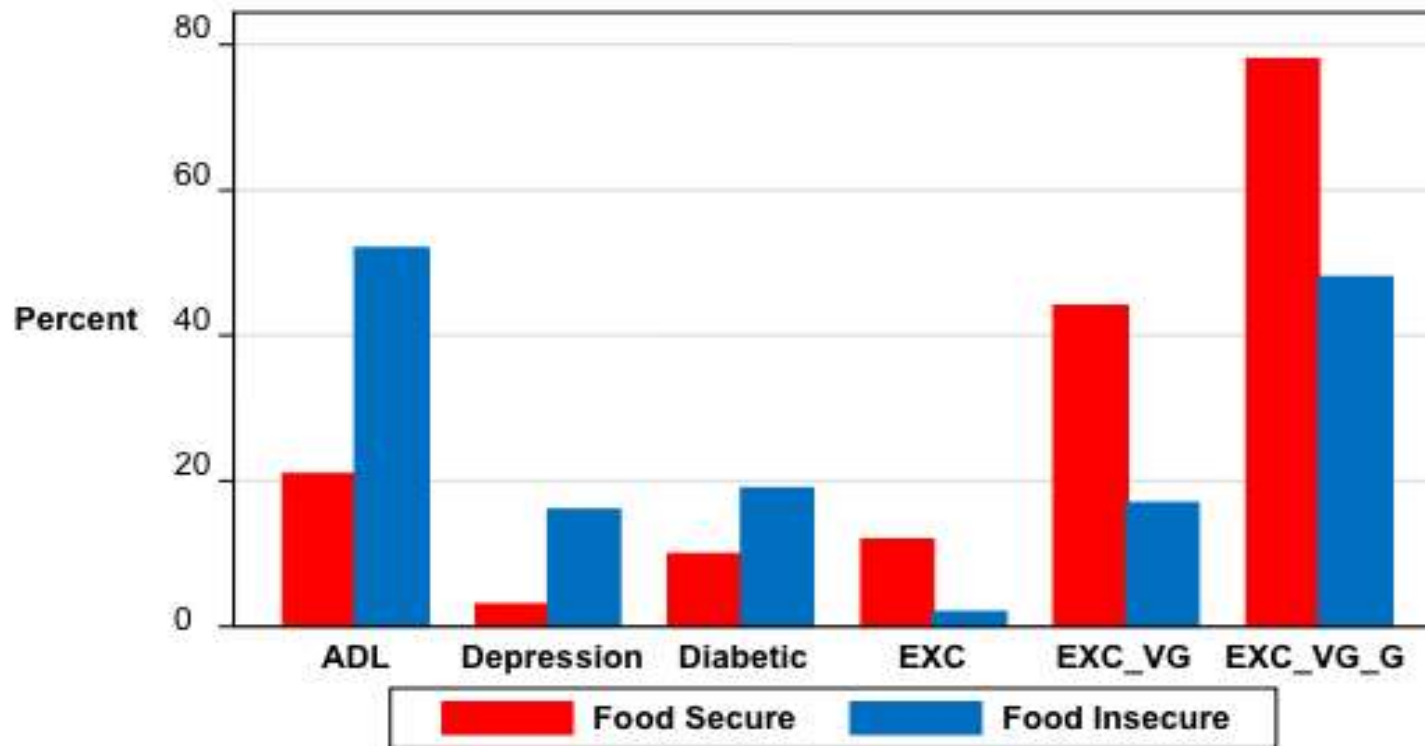
Food Insecurity and Health in Young Children (Children's Health Watch, 2014)



Source: Children's HealthWatch Data, 1998-2005. All increases statistically significant at $p < 0.05$.

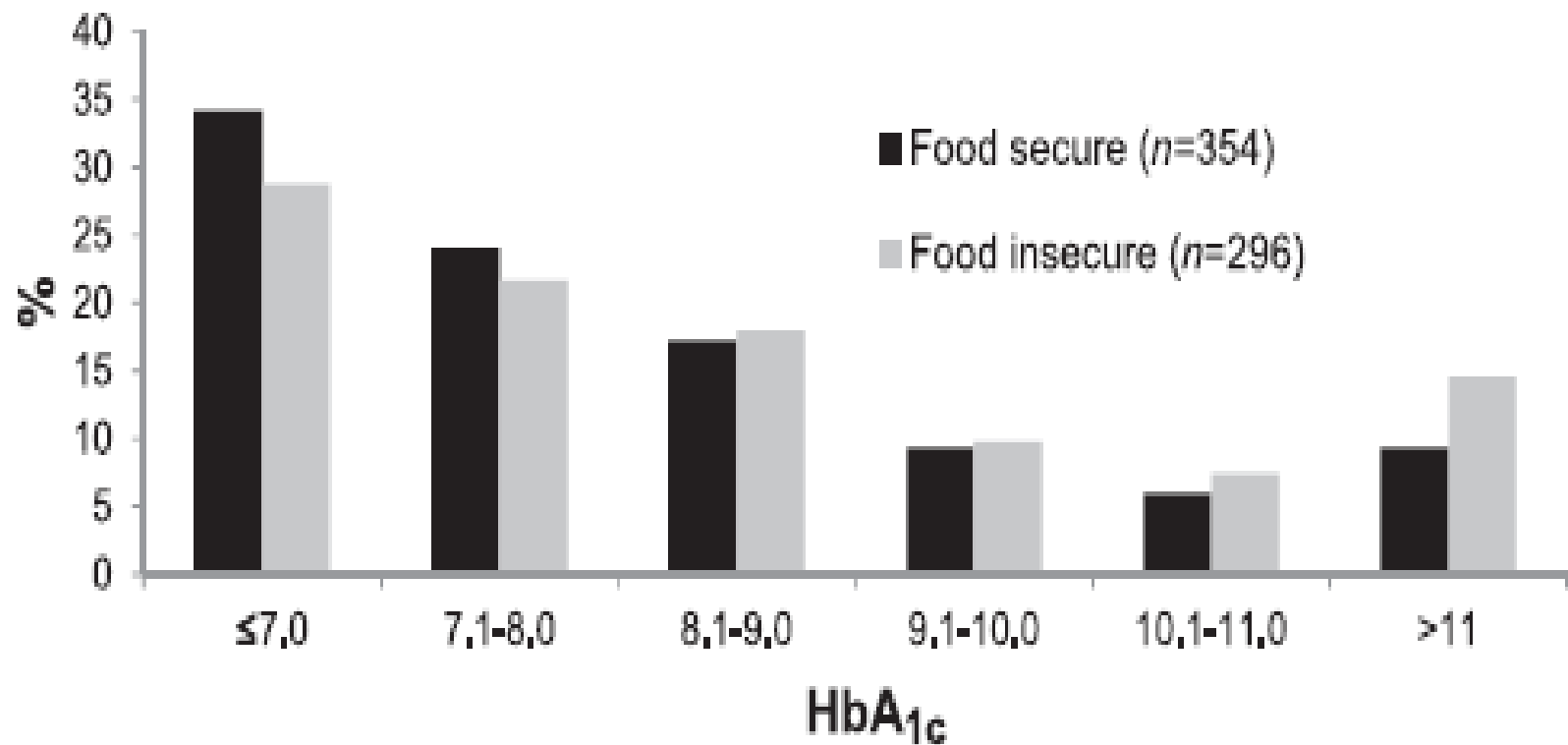
*These two statements are the first two items in the US Food Security Scale 3.

Health Outcomes and Food Insecurity in Adults Ages 50-59



ADL denotes at least one ADL limitation, EXC denotes in excellent health, EXC_VG denotes in very good or better health, EXC_VG_G denotes in good or better health

Association between HbA_{1c} and food security status among patients with diabetes receiving care in safety net clinics (*n* = 710).



Source: SELIGMAN, et al. DIABETES CARE, VOLUME 35, FEBRUARY 2012

Link Between Food Insecurity and Obesity

Food Insecurity and Risk for Obesity Among Children and Families: Is There a Relationship?

Healthy Eating Research Building evidence to prevent childhood obesity

A Research Synthesis, April 2010

The majority of U.S. households are food secure, meaning they have steady and dependable access to enough food to support active, healthy lives for all household members.¹ Unfortunately, the remaining 15 percent of U.S. households have limited or uncertain access to adequate food—they are food insecure.²

Members of these food-insecure households use a number of coping strategies, such as eating a less varied diet, participating in federal food and nutrition assistance programs, and obtaining emergency food from community food pantries and kitchens. However, an increasing proportion of households (from 3.1 percent of households in 2000 to 3.7 percent of households in 2008) are unable to avoid periodic reductions in food intake and disruptions to their normal eating patterns.^{3,4} While most households are able to shield children from reduced food intake, in more than 500,000 households across the United States children as well as adults experience periods when their normal eating patterns are disrupted by a lack of adequate food.⁵

Numerous studies have linked household food insecurity to poorer nutritional, physical and mental health among adults and children.⁶⁻¹⁴ In addition, research has found that food insecure children are more likely to have behavioral problems and academic difficulties.^{15,16,18} Food insecurity and obesity are widely viewed as separate public health problems; however, there is growing concern that these issues are related. Food insecurity may lead to weight gain because the least expensive food options to obtain a given amount of calories are typically high in calories and low in nutrients.^{17,19} Research suggests that high-calorie foods are easy to over-consume and promote weight gain if they are part of a regular diet.^{20,21} Households with limited resources tend to spend less on food overall and, more specifically, less on healthy foods that are lower in energy but more costly (e.g., fruits and vegetables).²²

With obesity rates at epidemic levels among children, adolescents, and adults in the United States,^{23,24} it is critical to understand the relationship between food insecurity and obesity and how to address both issues. This research synthesis reviews studies that examined the increasingly controversial relationship between food insecurity and obesity in the United States, with a focus on children and families. Given the potential implications for policy, the synthesis also explores



the role nutrition assistance programs may play in the relationship between food insecurity and obesity for youth and adults.

Key Research Findings

- Nearly 15 percent of U.S. households experience food insecurity, which disproportionately impacts populations at highest risk for obesity, including low-income households and members of racial/ethnic minority groups.²⁵
- Although a few studies have found that children living in food-insecure households are more likely to be obese than children who are food secure,^{26,27} most studies have found no evidence of a direct relationship.^{28,29}
- Women who experience a food insecurity are more likely to be obese compared with food secure women.^{30,31} However, it is unclear whether food insecurity prevents increased weight gain over time.^{32,33,35} Research among men^{32,33} has not consistently shown a relationship between food insecurity and weight status.

Healthy Eating Research is a national program of the Robert Wood Johnson Foundation

Robert Wood Johnson
Foundation

- ▶ Least expensive food options typically high in calories and low in nutrients.
- ▶ High-calorie foods are easy to over-consume and promote weight gain if they are part of a regular diet.
- ▶ Households with limited resources tend to spend less on food overall and, more specifically, less on healthy foods that are lower in energy but more costly (e.g., fruits and vegetables)

Sources: HER, 2010; Ludwig DS and Pollack HA, 2009; Hartline-Grafton HL, Rose D, Johnson CC, et al. 2009; Drewnoski A and Specter SE, 2004; Alaimo K, Olson CM

Other Factors?

- ▶ Cycles of Deprivation
- ▶ Contributes to Maternal Stress and Poor Family Functioning
 - ▶ Physiological/Metabolic Pathways
 - ▶ Adverse Coping Behaviors (ex. Overeating)
 - ▶ Disrupt Family Routines

Sources: Gundersen et al., 2010; Anderson and Whitaker, 2010

Stress of negotiating in low food resource environment

“That’s the thing that kills us most because most of us don’t watch what we eat you know...Most of us in this area are stressed beyond belief. Because they are trying to make ends meet, they’re trying to figure out how they’re gone feed their families or how are they gone get their kids to school next week off the \$54 paycheck they just got. So you know high blood pressure is a big thing and diabetes is another big thing because of again we don’t watch what we eat and we don’t exercise properly.

Cycle of Food Insecurity and Chronic Disease

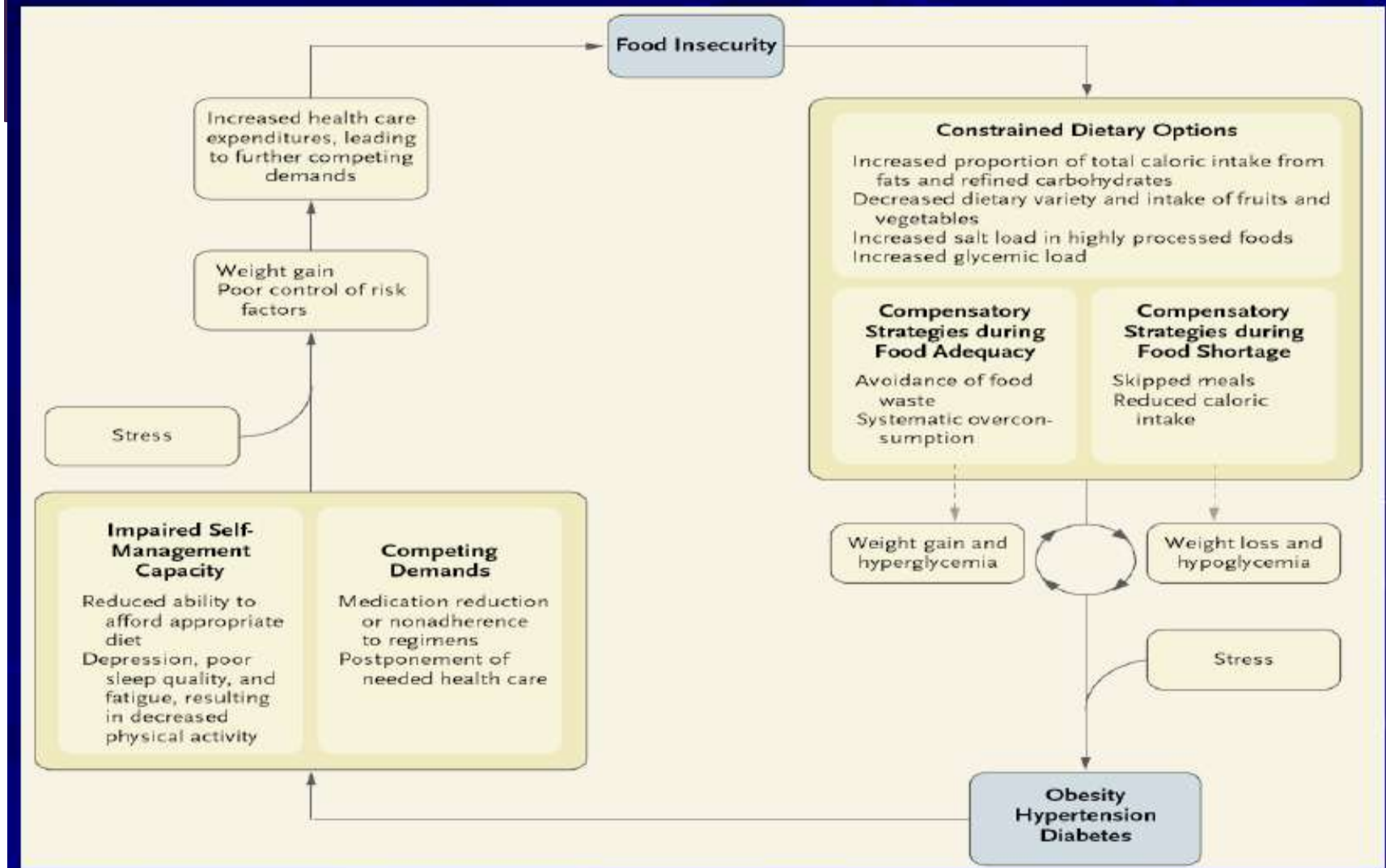
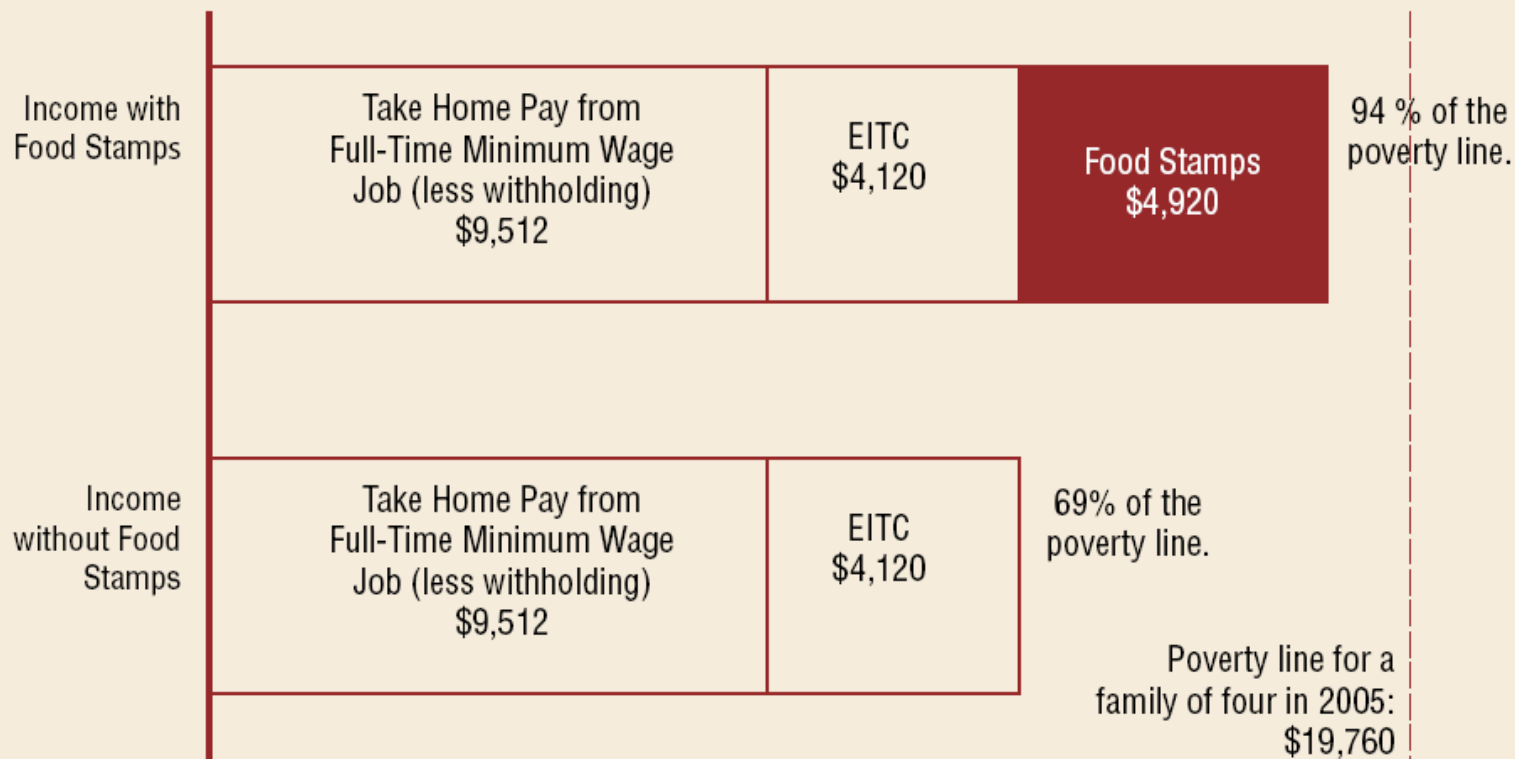


Figure 1.2 The Difference Food Stamps Make for the Working Poor

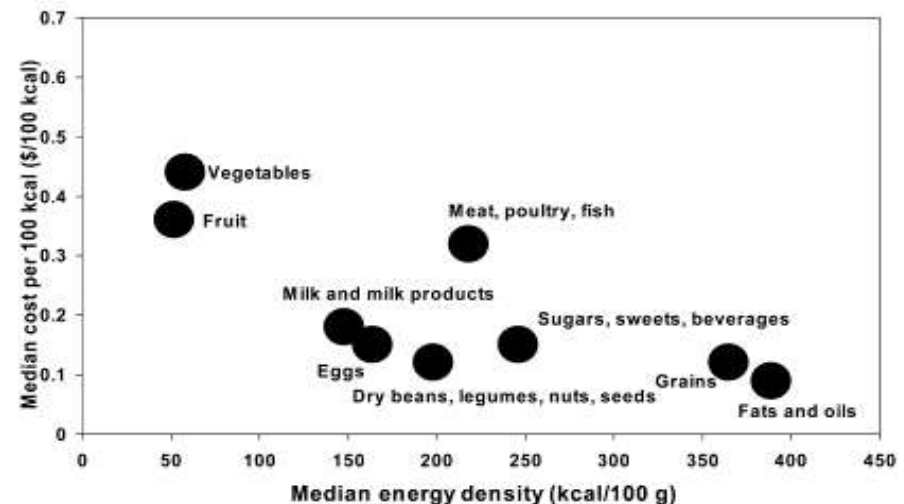
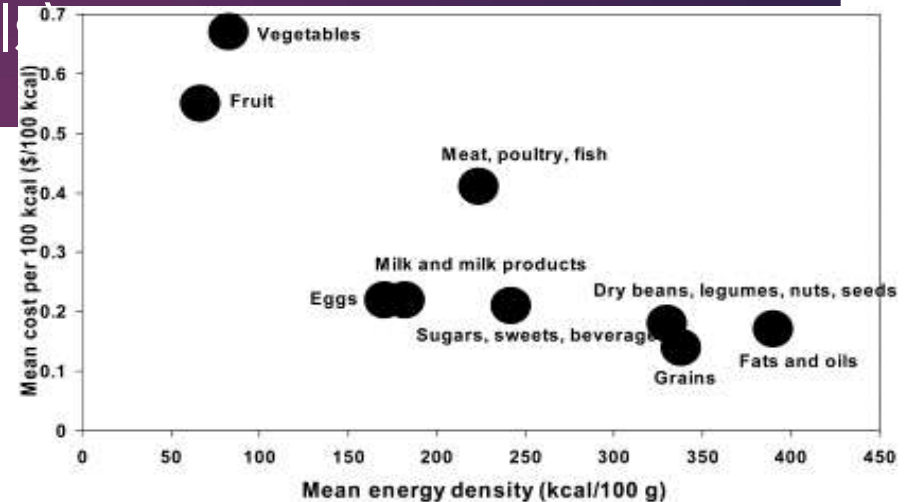
A family of four headed by an adult who works full-time (2,000 hours a year) at the minimum wage will have an annual income in 2005 that falls more than \$6,000 below the poverty line. Food Stamps close almost all of this gap.



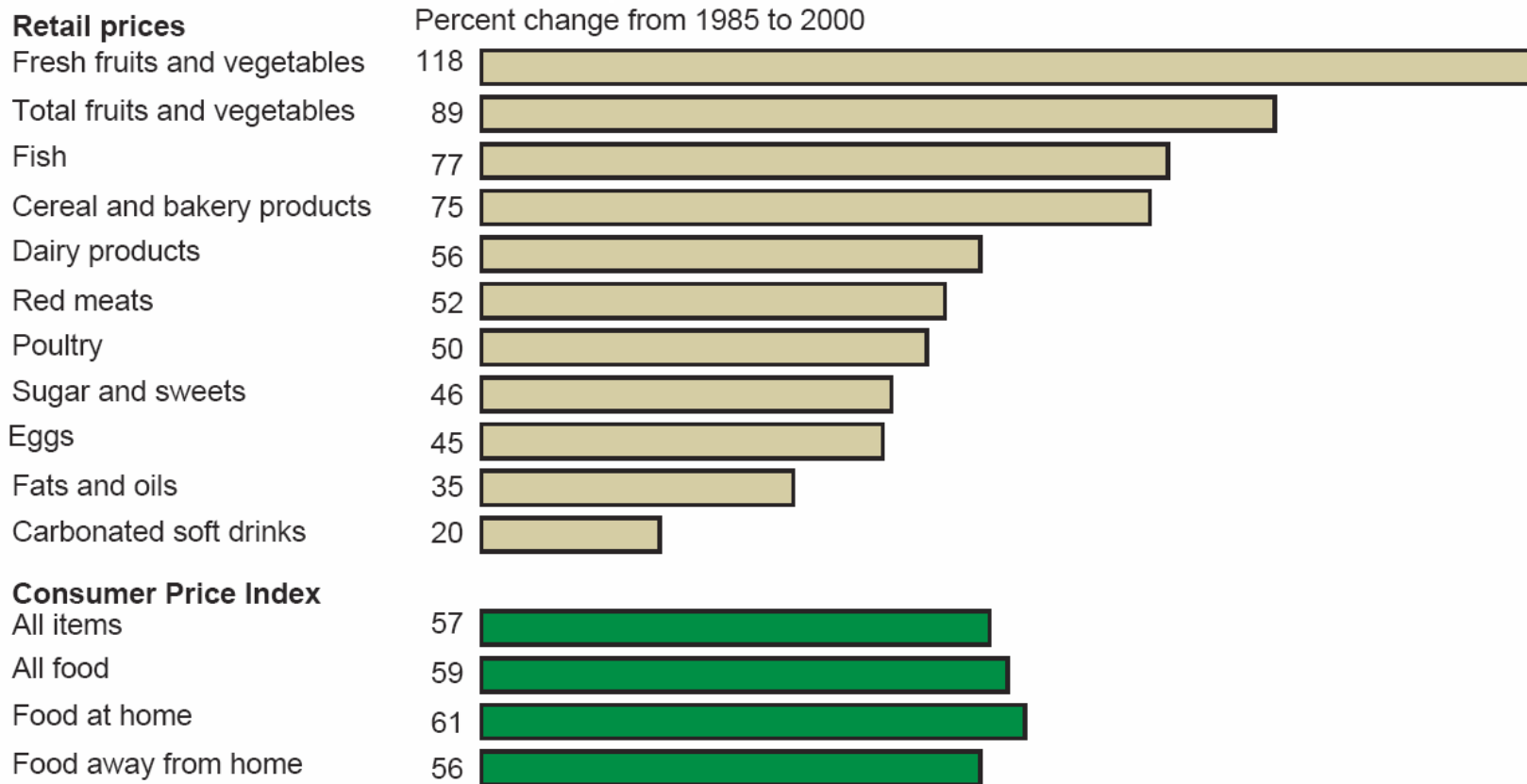
Source: Center for Budget and Policy Priorities

The Relationship Between Energy Density of Foods (kcal/100g) and Energy Costs (\$/100 kcal)

- ▶ Based on USDA nutrient composition and food prices data sets, showed that different food groups had different energy costs.
- ▶ Study showed that grains and fats had substantially lower energy costs than did vegetables and fruit.
- ▶ On a per calorie basis, grains, sugars, and fats were cheap, whereas fruit and vegetables were more expensive.



Increase in Retail Price of Food Groups, 1985-2000



Source: Calculated by USDA's Economic Research Service from the Consumer Price Index.

Putnam, 2002.

Marketing: High-Calorie/Low-Nutrient Promotions

Ads for High-Calorie/Low-Nutrient Products (e.g., fast food, sugary beverages, alcohol)

	Count	Sheets	Density		
			Sheets/ 1,000 Pop.	Sheets/ 100 Empl.	Sheets/ Sq. Mi.
Afr. Am. low	94	720	7.64	7.67	118.23
Afr. Am. high	24	154	2.82	2.78	35.81
Latino low	170	1,490	11.05	4.06	142.45
Latino high	73	300	3.12	2.41	74.44
White low	61	555	2.83	0.72	33.04
White high	57	138	1.23	0.09	3.61
All low income	325	2,765	6.50	2.24	82.91
All high income	154	592	2.25	0.35	12.72
All Afr. Am.	118	874	5.87	5.85	84.12
All Latino	243	1,790	7.75	3.64	123.53
All white	118	693	2.25	0.30	12.60

Source: Yancy, et al., 2009

Marketing: Cost-related



Source: Odoms et al., 2010

Closing

- ▶ Food insecurity has both short and long term consequences (direct and indirect impacts on physical and mental health)
- ▶ Relationship is complex and multi-dimensional

Brenda Derrick, MS, RD University of Illinois
Extension



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Time for Q&A!



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